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NOTES ON THE FLORA OF MICHIGAN—I[1]

FREDERICK J. HERMANN

THE records for the species here reported are based upon collections of either Mr. C. R. Hanes, of Schoolcraft, Michigan, or of the writer. Both Mr. Hanes' collections and the writer's are represented in the Herbarium of the University of Michigan, and duplicates of most of the writer's specimens have also been rather widely distributed among the larger herbaria of the eastern states. Determinations for Mr. Hanes' grasses have been verified by either Professor Hitchcock or Mrs. Chase, and for the confirmation of his other reported species the writer assumes the responsibility. Unless otherwise indicated,

[1] Paper from the Department of Botany and Herbarium of the University of Michigan, No. 576.

the report for each species represents the first record for Michigan so far as could be determined. The grass species prefixed by an asterisk are ascribed to Michigan in Hitchcock's *Manual of the Grasses of the United States* but without indication of locality, and their occurrence in Michigan is not represented on the distribution maps.

*Glyceria acutiflora Torr. Kalamazoo Co.: Schoolcraft Twp., June 3, 1934, *C. R. Hanes.*

The nearest known stations for this species are in southern Ohio and southern Indiana.

Muhlenbergia sylvatica Torr., f. attenuata (Scribn.) Palmer & Steyermark. Kalamazoo Co.: swamp, Prairie Ronde Twp., September 7, 1934, *C. R. Hanes.*

*Sporobolus asper (Michx.) Kunth. Kalamazoo Co.: along Grand Trunk Railway, Schoolcraft Twp., December, 1933, and Pavilon Twp., September, 1935, *C. R. Hanes.*

No doubt introduced. Recently reported also for Berrien County.[1]

Aristida dichotoma Mich.. Kalamazoo Co.: sterile, sandy soil, Charleston Twp., September 22, 1935, *C. R. Hanes.*

*Aristida basiramea Engelm. Kalamazoo Co.: sterile, sandy soil, Schoolcraft Twp., August 22, 1934, *C. R. Hanes.*

Leptoloma cognatum (Schult.) Chase. Kalamazoo Co.: common in sandy soil, Schoolcraft Twp., August 27, 1933, *C. R. Hanes.*

Reported by Hebert[2] for Berrien County and determination of specimen verified by C. C. Deam.

Scirpus debilis Pursh, var. Williamsii Fernald. Kalamazoo Co.: sandy soil, Eagle Lake, Texas Twp., August 26, 1935, *C. R. Hanes.*

Previously known, apparently, only from Massachusetts.

Scirpus Smithii Gray, var. setosus Fernald. Kalamazoo Co.: sandy shore of West Lake, Portage Twp., July 31, 1935, *C. R. Hanes.*

Carex vulpinoidea Michx., var. **pycnocephala**, var. nov., humilis, dense caespitosa; foliis angustis, rigidis; perigynio anguste lanceolato, gradatim in rostrum contracto, marginibus tenuibus haud cortice incrassatis.—Apparently confined to the Great Lakes region. Michigan: sandy shore of Big Stone Bay, Lake Michigan, 3½ miles west of Cecil Bay, Emmet County, August 14, 1934, *F. J. Hermann*, no. 6408 (type in Herbarium of F. J. Hermann); beach of Lake Huron, Mackinac Island, July 28, 1935, *H. A. Gleason, Jr.* Indiana: Steuben County, June 17, 1903, *C. C. Deam.* Minnesota: bog near Twin Ponds, Hubbard County, July 13, 1933, *J. B. Moyle*, no. 820.

From typical *Carex vulpinoidea* this variety differs in its narrowly

[1] Hebert, Am. Midl. Nat. **15**: 325. 1934.
[2] Ibid. 324.

lanceolate, very gradually beaked perigynia which are thin-edged and not at all corky-margined. In these characteristics it resembles *C. vulpinoidea* var. *setacea* (Dewey) Kükenthal, as interpreted by Bicknell[1] under *C. setacea* Dewey, from which it is readily distinguished by its low, densely cespitose habit, its narrow, rigid leaves, its short, broad and very congested inflorescence and its almost obsolete perigynium teeth.

Xyris caroliniana Walt. Kalamazoo Co.: West Lake, Portage Twp., August 23, 1934, *C. R. Hanes.*

Juncus militaris Bigel. Presque Isle Co.: mucky, drying bed of Lake Sixteen (Sect. 16, Twp. 36 N., R. 2 E.), Black Lake State Forest, 8 miles west of Hammond, August 12, 1935, *E. L. Miner*, no. 1562; August 27, 1935, *F. J. Hermann*, no. 7015 and September 13, 1935, *F. J. Hermann*, no. 7317.

Dr. E. L. Miner of Weber College, Ogden, Utah, recently turned over to the writer for determination a set of Junci which he had collected in the Douglas Lake region and among them was this species of the Atlantic slope. The most westerly stations previously known for this rush are in Oneida and St. Lawrence Counties, New York, so that the Michigan record represents a range extension of approximately 500 miles. A trip was made to Lake Sixteen by the writer two weeks after Dr. Miner's discovery of *Juncus militaris* and it was found to cover many acres of the drying, mucky lake bed near the northeastern shore. About one-fourth of the colony was forma *subnudus* Fernald.[2]

Lake Sixteen is situated on the sandy bed of former Lake Algonquin. It is bounded on the south by steep, sandy moraines covered with aspen and white pine, and on the east, north and west by plains where the forest is a mixture of aspen, white and jack pine, red maple, red oak and canoe birch.

The only plant growing with *Juncus militaris* at this station is *Scirpus acutus*, but toward the shore its associates are largely either coastal plain species or species having their nearest allies in others of that floristic element, such as *Solidago hirtella* Greene which apparently has been derived from the coastal *S. graminifolia* var. *Nuttallii.* The sandy and peaty margin of the lake is occupied by *Juncus pelocarpus*, *Eriocaulon septangulare*, *Viola lanceolata* and *Hypericum ellipticum.* This peaty zone extends shoreward for about fifty feet and is succeeded

[1] Bicknell, Bull. Torr. Bot. Club **23**: 24. 1896.
[2] Fernald, Rhodora **24**: 166. 1922.

by a sandy beach where the following additional species come in: *Muhlenbergia uniflora, Drosera intermedia, Panicum meridionale* var. *albemarlense, Utricularia cornuta, Solidago hirtella* and *Bartonia virginica.*

The presence of *Juncus militaris* in Michigan near the northwestern end of Lake Huron is further evidence corroborating the hypothesis of a former migratory route for coastal plain species along the shore of the glacial lakes and their Hudson Valley outlet to the Hudson-Champlain Estuary.

JUNCUS EFFUSUS L., var. COMPACTUS Hoppe. Alger Co.: sandy border of black spruce bog, West Branch of Manistique Creek, 6 miles east of Shingleton, August 14, 1934, *F. J. Hermann*, no. 6394.

This is the first Michigan record for this eastern and European variety. Fernald and Wiegand[1] cite specimens ranging from Newfoundland southward along the coast to Massachusetts.

JUNCUS EFFUSUS L., var. DECIPIENS Buchenau. Chippewa Co.: wet, rocky shore of Sugar Island, 1½ miles northwest of Homestead, September 2, 1935, *F. J. Hermann*, nos. 7122 and 7136.

The westernmost stations cited by Fernald and Wiegand[2] for this variety of the Northeast and of eastern Asia are Plevna and Algonquin Park, Ontario. At Sugar Island it was found to be locally plentiful along the rocky and sandy shores of Lake George. Another station at Haviland Bay on Lake Superior, Sault Ste. Marie District, Ontario (*F. J. Hermann*, nos. 7281 and 7291), may be noted here as being slightly farther west than the Sugar Island locality.

PILEA FONTANA (Lunell) Rydb. Washtenaw Co.: open marshy bank of Huron River, 2 miles east of Ann Arbor, August 24, and September 22, 1935, *F. J. Hermann*, nos. 7003 (in flower) and 7341 (in fruit).

Reported from North Dakota, Nebraska and Indiana.[3]

P. fontana seems to be a plant of open marshy or boggy situations, while the usual habitat of *P. pumila* is moist, shaded woods. At the Ann Arbor station it densely carpets the marshy river's edge for several hundred yards and has much the aspect of a bed of seedlings, the fruiting plants averaging six inches in height, although occasional individuals are fully as large as *P. pumila.* It is here associated with *Pedicularis lanceolata, Agrostis perennans, Juncus effusus* var. *Pylaei,*

[1] Fernald and Wiegand, RHODORA **12**: 85. 1910.
[2] Loc. cit. 87.
[3] See also Fernald, RHODORA **38**: 169–170. 1936.

Scirpus validus, Equisetum palustre, Lobelia siphilitica, Juncus Dudleyi, Eupatorium perfoliatum, Gentiana Andrewsii, Carex Pseudo-Cyperus, C. Bebbii, Scirpus atrovirens, Bidens trichocarpa, Aster puniceus and *Carex hystricina.*

Lepidium perfoliatum L. Kalamazoo Co.: alfalfa field, Schoolcraft Twp., May 26, 1935, *C. R. Hanes.* Doubtless introduced. Reported for Washtenaw County by Walpole.[1]

Lechea Leggettii Britt. & Hollick. Kalamazoo Co.: sand dunes, Austin Lake, Portage Twp., October 10, 1934, *C. R. Hanes.*

Hydrocotyle americana L. Chippewa Co.: abundant on wet, mossy floor of balsam-arbor-vitae-birch woods, ½ mile south of Homestead, Sugar Island, September 5, 1935, *F. J. Hermann,* no. 7199.

The only record of this species for the Upper Peninsula is that reported by Kenoyer[2] as "Chippewa Co., Lewis Foote, 1867."

Myosotis micrantha Pallas. Washtenaw Co.: gravelly roadside, 1½ miles south of Portage Lake, May 20, 1935, *F. J. Hermann,* no. 6485; waste ground, U. of M. Botanical Gardens, May 25, 1935, *F. J. Hermann,* no. 6508.

Apparently of recent introduction in Michigan. It is abundant at both the above localities. The American range of this weedy exotic is usually given as "Mass. to Ont. and O.," but according to Schaffner[3] the Ohio report is unauthenticated.

Salvia lanceifolia Poir. Kalamazoo Co.: field near hog yard, Schoolcraft Twp., August 21, 1935, *C. R. Hanes.* Probably introduced with grain.

Gerardia Gattingeri Small. Kalamazoo Co.: edge of marsh, Schoolcraft Twp., August 30, 1935, *C. R. Hanes.* Reported for Oakland County by Pennell.[4]

Liatris punctata Hook. Kalamazoo Co.: a single plant on roadside near prairie, Schoolcraft Twp., August 16, 1933, *C. R. Hanes.*

Boltonia asteroides (L.) L' Hér. Monroe Co.: wet, sandy shore of sluggish creek 5 miles southeast of Erie, August 10, 1935, *F. J. Hermann,* no. 6929.

Not previously recorded from the Michigan shore of Lake Erie. It is plentiful at this locality near the Ohio state line and was also found to be abundant on the Lake Erie shore two miles east of Erie but at this date was not yet in flower at the latter station. Beal, in *Additions to the Michigan Flora,*[5] gives Van Buren County, *H. S.*

[1] Walpole, Flora of Washtenaw County, Michigan. 1924.
[2] Kenoyer, Papers Mich. Acad. Sci. **3**: 154. 1923.
[3] Schaffner, Ohio Biol. Surv. Bull. **25**: 183. 1932.
[4] Pennell, Proc. Acad. Nat. Sci. Phila. **81**: 216. 1929.
[5] Beal, Tenth Ann. Report Mich. Acad. Sci. 85. 1909.

Pepoon, as the only Michigan report for this species which is generally considered a member of the coastal plain flora.

HELENIUM NUDIFLORUM Nutt. Kalamazoo Co.: moist soil southwest of Camp Custer, August 20, 1935, *H. R. Becker*.

CHONDRILLA JUNCEA L. Kalamazoo Co.: sandy soil, Portage Twp., August 8, 1934, *C. R. Hanes*.

LACTUCA SALIGNA L. Washtenaw Co.: dry, sterile bank of Huron River, Shanghai Pit, 3 miles northwest of Ypsilanti, August 4 and 15, 1935, *F. J. Hermann*, nos. 6922 and 6972.

This European weed, although known from Ohio for several decades, seems only lately to be spreading rapidly, as the Indiana, Missouri and California reports are recent and the writer has not succeeded in finding other Michigan records. The flowers in the Washtenaw County colony were deep blue instead of the yellow prevalent in § *Scariola;* but since they were partly wilted when found, this color may have been due to oxidation. Reports by others who have observed the plant in the field are not in agreement upon the flower color.

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A NOTE ON SPECIES DIFFERENTIATION IN ANTENNARIA

G. LEDYARD STEBBINS, JR.

IN a recent publication (RHODORA **38**: 231. 1936) Dr. Fernald has ascribed to me the principle that, "we are to distinguish as species the bisexual and parthenogenetic series which show no other appreciable differences." In answer to this contention, I wish to reply that I have never held to this or any similar principle, and that no mention has ever been made of it in any of my publications. Furthermore, two papers now in manuscript or in preparation which discuss bisexual and parthenogenetic races in species of *Crepis* and *Youngia* will demonstrate even more clearly that no such principle is held. In the case of *Antennaria*, which was the subject of Fernald's discussion, I have long been aware that in some species, e.g. *A. Parlinii* and *A. fallax*, both bisexual and parthenogenetic races exist, just as they do in the species of *Crepis* and *Youngia* which are the subject of these forthcoming papers, and it is for this reason that in my discussion of the differences between *A. virginica* and *A. neodioica*